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SR



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/609,129	06/30/2003	Merritt Funk	071469-0304316	6686
909	7590	09/01/2004	EXAMINER	
PILLSBURY WINTHROP, LLP			KOSOWSKI, ALEXANDER J	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2125	

DATE MAILED: 09/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

SR

## Office Action Summary

Application No.

10/609,129

Applicant(s)

FUNK, MERRITT

Examiner

Alexander J Kosowski

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

- 1) Claims 1-9 are presented for examination.

#### *Claim Rejections - 35 USC § 102*

- 2) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

- 3) Claims 1-9 are rejected under 35 U.S.C. 102(e) as being unpatentable by Reiss et al (U.S. PG PUB 2003/0014145).

Referring to claim 1, Reiss teaches a method of operating a semiconductor processing system comprising determining a first state for a wafer and determining a second state for the wafer (Paragraph 033, whereby measurements may be obtained both before and after processing of the wafers to determine a first and second state); determining a process recipe to change the state of the wafer from the first state to the second state (Paragraph 0033), performing the process recipe on the wafer (Paragraph 0036), wherein the state of the wafer changes from the first state to a processed state (Paragraph 0037), determining when the processed state is not the second state (Paragraph 0033, whereby measurements may be obtained during processing), and updating the process recipe (Paragraph 0037).

Referring to claim 2, Reiss teaches the method of operating a semiconductor processing system as claimed in claim 1, wherein the determining of the first state comprises measuring at least one of an optical property, an electrical property, and a physical property (Paragraph 0035).

Referring to claim 3, Reiss teaches the method of operating a semiconductor processing system as claimed in claim 1, wherein the determining of the first state comprises receiving at least one of optical data, electrical data, and physical data (Paragraph 0035).

Referring to claim 4, Reiss teaches the method of operating a semiconductor processing system as claimed in claim 1, wherein the determining of the second state comprises measuring at least one of an optical property, an electrical property, and a physical property (Paragraph 0035).

Referring to claim 5, Reiss teaches the method of operating a semiconductor processing system as claimed in claim 1, wherein the determining of the second state for a wafer comprises receiving at least one of optical data, electrical data, and physical data (Paragraph 0035).

Referring to claim 6, Reiss teaches the method of operating a semiconductor processing system as claimed in claim 1, wherein the determining of the process recipe comprises feeding forward at least one process recipe based on the first and second state of the wafer (Paragraph 0030).

Referring to claim 7, Reiss teaches the method of operating a semiconductor processing system as claimed in claim 1, wherein the determining of the process recipe comprises predicting the second state using the first state of the wafer and a process model based on the process conditions (Paragraph 0047).

Referring to claim 8, Reiss teaches the method of operating a semiconductor processing system as claimed in claim 1, further comprising: determining differences between the processed state and the second state, and feeding back the differences (Paragraph 0030, whereby wafers are measured during processing).

Referring to claim 9, Reiss teaches a method of operating a semiconductor processing system comprising determining a first state for a wafer and determining a second state for the wafer (Paragraph 033, whereby measurements may be obtained both before and after processing of the wafers to determine a first and second state); determining a predicted state for the wafer, wherein a predicted process recipe is used to change the state of the wafer from the first state to the predicted state (Paragraph 0048), determining a modeled state for the wafer, wherein a process model is used to change the state of the wafer from the first state to the modeled state (Paragraph 0047), determining a measured state for the wafer (Paragraph 0033), and determining a recipe for changing the wafer state to the second state using the first state, the predicted state, the modeled state, and the measured state (Paragraphs 0037 and 0049).

#### *Conclusion*

- 4) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Stoddard et al (U.S. Pat 6,587,744) – teaches a R2R controller for wafer fabrication.

Zou et al (U.S. Pat 6,748,280) – teaches a R2R control system with state estimation.

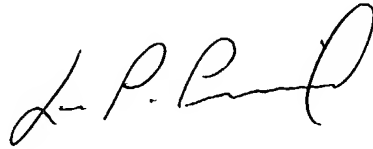
- 5) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander J Kosowski whose telephone number is 703-305-3958. The examiner can normally be reached on Monday through Friday, alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 703-308-0538. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. In addition, the examiner's RightFAX number is 703-746-8370.

Art Unit: 2125

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Alexander J. Kosowski  
Patent Examiner  
Art Unit 2125

A handwritten signature in black ink, appearing to read "L. P. Picard", written in a cursive style.

LEO PICARD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100